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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,319	11/16/2006	Takeshi Okada	20664-002US1	4925
26211 7590 12/28/2007 FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER ANDERSON, GUY G	
			ART UNIT 2883	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/573,319

Applicant(s)

OKADA ET AL.

Examiner

Guy G. Anderson

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Continuation of Attachment(s) 3. Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :3/24/2006 & 11/16/2006 & 12/12/2007.

## DETAILED ACTION

### *Election/Restrictions*

- 1.1 Applicant's election without traverse of invention of Group I, claims 1-11, 14-20 in the reply filed on 11/6/2007 is acknowledged.

### *Claim Objections*

- 2.1 Claim 1 is objected to due to language ambiguities. The phrase "and a light transmitting part optically coupled to the first optical element, the light emitting subassembly, the first optical element, the second optical element, and the first light receiving subassembly being arranged along a predetermined plane" is unclear. Is the light transmitting part optically coupled to all of the elements recited or just to the first optical element? Precisely which elements are arranged along a predetermined plane? Examiner feels that this language can be interpreted in at least two structurally different ways.

### *Claim Rejections - 35 USC § 112*

- 3.1 Claims 14 and 18 recite the limitation "along the other predetermined plane." There is insufficient antecedent basis for this limitation in the claims.

### *Claim Rejections - 35 USC § 102*

- 4.1 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless —*

*(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

- 4.2 Claim 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US-6252719 to Eichenbaum.

Regarding claim 1-3 and 6, Eichenbaum discloses a beam splitter combiner module comprising/wherein:

1. An optical module comprising:

a first optical element for reflecting an optical signal of a first wavelength component and transmitting an optical signal of second and third wavelength components; [Fig. 1-3, #12]

a first light receiving subassembly, optically coupled to the first optical element, provided to receive the optical signal of the first wavelength component; [Fig. 1-3, #22]

a second optical element for reflecting the optical signal of the second wavelength component and transmitting the optical signal of the third wavelength component; [Fig. 1-3, #14]

a second light receiving subassembly, optically coupled to the second optical element, provided to receive the optical signal of the second wavelength component; [Fig. 1-3, # 24]

a light emitting subassembly, optically coupled to the second optical element, provided to generate the optical signal of the third wavelength component; [Fig. 1-3, #26]

and a light transmitting part optically coupled to the first optical element [Fig. 1-3, #20 and 32], the light emitting subassembly, the first optical element, the second optical element, and the first light receiving subassembly being arranged along a predetermined plane, [Fig. 1-3] and the light emitting subassembly, the first optical element, the second optical element, and the second light receiving subassembly being arranged along another predetermined plane intersecting at a predetermined angle with the predetermined plane. [Fig. 1-3]

2. The optical module according to claim 1, wherein the second wavelength component is between the first wavelength component and the third wavelength component. [Fig. 1-3, wherein three different wavelengths are shown, wavelength 1, 2 and 3, and wherein wavelength 2 is between wavelength one and three.]

3. The optical module according to claim 1 or 2, further comprising a third optical element provided between the first optical element and the first light receiving subassembly and having an optical characteristic to transmit the optical signal of the

first wavelength component and to intercept the optical signal of the second and third wavelength components. [Fig. 1-3, # 28]

6. The optical module according to claim 1, wherein the light transmitting part has an optical fiber, the light emitting subassembly has a semiconductor laser, and each of the first and second light receiving subassemblies has a photodiode. [Fig. 1-3, #18, 22, 24, 26]

***Claim Rejections - 35 USC § 103***

- 5.1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

- 5.2 Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US-6252719 to Eichenbaum.

Regarding claims 4-5, Eichenbaum does not specifically disclose a fourth optical element between the second optical element and the second light receiving subassembly.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include additional reflective/transmissive elements since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.*, 193 USPQ 8

- 5.3 Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US-6252719 to Eichenbaum.

Eichenbaum does not specifically disclose the particular wavelength ranges for each wavelength channel as specified by applicant. However, Eichenbaum specifically discloses the suitable telecom wavelength ranges 1200-1600nm. [Col. 4, lines 55-65.] It would have been obvious to one of ordinary skill in the art at the time of invention to select wavelength

ranges for each channel depending upon the type of fiber used and what frequency band was being used, i.e. C band, L band etc.

- 5.4 Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US-6252719 to Eichenbaum in view of US-5841562 to Rangwala and in further view of US-5408559 to Takahashi.

Eichenbaum does not specifically disclose an optical joint sleeve with first and second mount surfaces extending along axes that intersect with a predetermined axis, and wherein the planes defined by the first axis and the predetermined axis intersect with a second plane defined by the second axis and the predetermined axis and wherein various elements are mounted on various sidewalls of a joint sleeve.

Rangwala discloses a bidirectional OE transceiver with optical joint sleeve wherein side wall portions support the light receiving assembly and wherein the light emitting assembly is located at one end of the sleeve and positioned relative to the an optical element, and wherein the first and second mount surfaces extend along first and second axes that intersect each other along with their respective planes. [Fig. 2, #30 and 22.]

Takahashi discloses an OE device with similar structural features including sidewalls and mounting surfaces in a sleeve wherein the axes that are formed intersect along a predetermined axis.

The limitations claimed by applicant are minor mechanical variations on what is disclosed in the prior art. the differences are primarily due to the fact that applicant ahs merely included another part, namely a second light receiving assembly. Since it has been held that mere duplication of essential working parts of an invention involves only routine skill in the art, it would have been obvious to include a second light receiving assembly as claimed by Eichenbaum. Thus, the variations in mechanical structure would have been obvious as a means to house the additional light receiving assembly.

- 5.5 Claim 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US-6252719 to Eichenbaum in view of US-6900509 to Gallup.

Eichenbaum does not specifically disclose first and second substrates electrically connected to the light receiving subassemblies and wherein the first substrate mounts the second substrate and the second substrate is provided along a predetermined plane.

Gallup discloses an optical receiver package wherein a sub mount which is a substrate is electrically connected to a die. [Abstract, Fig. 1, #120, Col. 4, Lines 33-40.]

It would have been obvious to one of ordinary skill in the art at the time of invention to electrically connect the substrate to the optoelectronic components in order to simplify the manufacturing process and provide electrical connections in an integrated package.

- 5.6 Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over US-6252719 to Eichenbaum in view of US-6597713 to Ouchi.

Eichenbaum does not specifically disclose a processing circuit mounted on the first and second substrate to process analog and digital signals from the light receiving sub assemblies.

Ouchi discloses an optical functional device wherein VCSEL arrays and photodiode assemblies can be mounted on substrates and connected to processors. [Abstract, Col. 1, Lines 10-20, Col. 12, lines 55-67 and Col. 15, Lines 15-35.]

It would have been obvious to one of ordinary skill in the art at the time of invention to include processor circuitry on the substrate in order to manufacture a true integrated optoelectronic device.

- 5.7 Claims 15-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US-6252719 to Eichenbaum.

Eichenbaum does not specifically disclose receiving digital and analog and video signals. However, video, analog and digital signals are all well known in the art and it is further well known that these signals are transmitted over fiber optic lines. Therefore, it would have been obvious to one of ordinary skill in the art to design an optical receiver capable of receiving the various types of modulated signals that are transmitted over modern day telecom systems.

### ***Conclusion***

- 6.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.8045. The examiner can normally be reached on Tuesday-Saturday 0900-2200.
- 6.2 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



6.3 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

6.4 Date and signature of assistant examiner.



December 20, 2007



**BRIAN HEALY**  
PRIMARY PATENT EXAMINER